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Evaluating and Enhancing Community Education Programs in Shanxi Province: A Multi-System Analysis of Impacts on Educators and Learners

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Abstract

Community education programs play a crucial role in promoting lifelong learning, skill development, and social engagement, particularly in rural and underserved regions. In China, initiatives such as "Lifelong Learning for All" have expanded access to community education, yet challenges related to funding, program quality, and cultural alignment persist. This study aimed to explore the impact of community education programs on educators in Shanxi Province, China, and to propose strategies for improving program design and sustainability. Guided by Bronfenbrenner's Ecological Systems Theory (EST), the research employed a qualitative approach combining semi-structured interviews with 20 community educators and document analysis. Findings revealed that community education programs fostered skill development, peer collaboration, and professional fulfillment, strengthening educators' resilience and teaching effectiveness. At the mesosystem level, partnerships with NGOs, government agencies, and local organizations expanded program reach but also introduced challenges such as misaligned priorities and communication gaps, requiring careful coordination and cultural alignment. Macrosystem factors, including national policies and rural cultural norms, influenced program implementation, highlighting the need for localized adaptations and adequate funding to ensure inclusivity and sustainability. In response, the study developed the Integrated Community Empowerment and Education Model (ICEEM), a five-component framework emphasizing community-centered curriculum design, educator capacity-building, strengthened partnerships, localized resource management, and continuous community engagement and feedback. ICEEM provides a practical, multi-system strategy to enhance program quality, address structural barriers, and align educational initiatives with local needs. The study recommends flexible policy frameworks, greater investment in rural education infrastructure, targeted professional development, and active stakeholder participation to foster sustainable and equitable community education. These findings contribute to the growing body of research on community education by offering a scalable model for improving program outcomes in Shanxi Province and similar rural contexts.

Keywords: community education; lifelong learning; Ecological Systems Theory (EST); educator capacity-building; rural education; program sustainability; stakeholder engagement; curriculum design

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INTRODUCTION

Community education programs have long played a vital role in addressing the diverse educational needs of populations worldwide. These initiatives are characterized by their adaptability, shaped by varying policies, cultural contexts, and socio-economic conditions across nations (Gomes & Pereira, 2021). Their focus often spans curriculum delivery, vocational skills training, cultural enrichment, and social services, with the overarching goal of meeting community needs and supporting holistic development (Lee, 2022). The success of these programs is largely tied to their ability to actively engage the community, build collaborations, and involve stakeholders such as schools, volunteers, local organizations, and government agencies in the pursuit of shared educational goals (Harris, 2020). Importantly, many programs are designed to serve marginalized populations, such as low-income families, immigrants, and individuals with disabilities, thus fostering social inclusion and improving quality of life (Chen, 2023).

In China, community education programs have expanded rapidly, driven by strong government backing and policies promoting lifelong learning. These programs now address a wide

range of needs, including cultural education, health awareness, vocational skills training, and social support services. Social organizations and volunteers play an active role in delivering these initiatives, while technological innovations have expanded educational access, enabling outreach to vulnerable groups such as migrant workers, people with disabilities, the elderly, and economically disadvantaged households (Zhao, et al., 2023). Additionally, China's participation in international collaboration has allowed it to both learn from and contribute to global best practices in community education (Lee, 2022).

Within Shanxi Province, community education programs have proven to be particularly important in both providing education and driving broader community development (Chen, 2023). Nonetheless, they face challenges that limit their effectiveness, including resource shortages, inconsistent program quality, and insufficient professional training for educators. Assessing the impact of these programs is crucial to understanding their strengths and weaknesses and to identifying areas for improvement. Evaluating both educator and learner outcomes can reveal gaps in program delivery and inform more targeted interventions. Educators play a critical role in shaping program quality, so examining their experiences can guide the development of training and support systems that address learner diversity and resource constraints (Wang, 2023).

To address these challenges, this study draws on Bronfenbrenner's Ecological Systems Theory (EST) as a framework for examining the experiences of community educators in Shanxi Province. Bronfenbrenner (1979) conceptualized individuals as embedded within interconnected systems – microsystem, mesosystem, exosystem, macrosystem, and chronosystem – that collectively shape their experiences over time. While this study primarily focused on the microsystem, mesosystem, and macrosystem, these layers provided a structured lens for analyzing the direct, relational, and societal factors shaping the experiences of community educators in Shanxi. The microsystem captures educators' daily interactions with learners and colleagues; the mesosystem reflects the relationships between different community and institutional settings; and the macrosystem encompasses broader cultural norms, social values, and policy frameworks influencing education.

At the microsystem level, educators' professional experiences are shaped by their direct engagement with learners, colleagues, and available resources. Supportive peer networks, access to teaching materials, and positive relationships within educational settings foster motivation, job satisfaction, and professional growth, whereas negative experiences can contribute to stress and burnout (Duerden et al., 2021). The mesosystem builds on this by highlighting the collaborative networks that connect schools, NGOs, and local governments, which are critical for sharing resources and enhancing program delivery (Zhang & Huang, 2023). Strong inter-organizational cooperation facilitates more efficient implementation, while weak coordination can present significant barriers. The macrosystem, meanwhile, includes national policies, economic conditions, and cultural norms that shape the overall environment in which educators operate. Supportive policies can boost resources and recognition for community education, while restrictive or poorly funded initiatives may hinder progress. Taken together, these ecological layers offer a holistic understanding of the factors influencing community educators in Shanxi Province, allowing for more targeted improvements that address not only immediate needs but also systemic challenges.

Guided by this framework, the study seeks to: (1) explore educators' perceptions of how community education programs impact their professional growth; (2) investigate how networks within the community and across local organizations affect their work; (3) analyze how societal, cultural, and policy factors influence their roles and challenges; and (4) develop a model for strengthening community education programs in Shanxi based on these insights.

The findings from this study have the potential to benefit multiple stakeholders by offering both practical and theoretical contributions. For community educators, the research provides insights into the factors influencing their professional growth, job satisfaction, and teaching practices, while highlighting strategies to reduce burnout and enhance learner engagement. Policymakers can draw on the evidence to improve funding structures, strengthen recognition of educators' roles, and design policies that promote effective collaboration among institutions and local organizations. Community organizations may use the results to better understand how partnerships and resource sharing affect program outcomes, thereby informing more responsive and sustainable interventions. Finally, for researchers, this study offers a multi-system perspective that not only deepens understanding of community education in Shanxi but also serves as a foundation for comparative analyses and future applications of ecological systems theory in diverse educational contexts.

LITERATURES

Community Education Programs. Community education programs are key platforms for promoting lifelong learning and supporting holistic community development. Defined as structured initiatives that address the educational, social, and cultural needs of local populations, these programs empower individuals by enhancing their skills and knowledge in ways that benefit personal growth and community well-being (Smith et al., 2020). They emphasize inclusivity by offering opportunities for diverse groups—including underserved populations, adults, and marginalized individuals—to access educational experiences often unavailable through formal schooling (Lee, 2022). Their primary goal is to equip participants with practical skills and knowledge, fostering a culture of shared learning and social cohesion (Li & Sun, 2021).

The essential elements of community education include curriculum development, skills training, cultural activities, and social services. Programs often focus on practical topics such as financial literacy, health education, and vocational training (Kim & Park, 2019), while skills training enhances employability and economic independence through technology, trade, and entrepreneurship (Zhao et al., 2023). Cultural activities strengthen belonging and pride, particularly in diverse communities (Huang & Wang, 2021), and social services such as counseling and healthcare promote overall well-being (Choi, 2020). Together, these initiatives encourage lifelong learning, helping individuals adapt to changing societal and workforce demands (Nelson et al., 2022), and strengthen social development by fostering civic engagement, reducing inequalities, and promoting inclusive, cohesive communities (Smith et al., 2020; Zhao et al., 2023).

Roles and Responsibilities of Community Educators. Community educators are central to the success of community education programs, serving as facilitators, trainers, and social advocates who drive both learning and social change (Wong & Ng, 2021). As facilitators, they adapt curriculum content to meet learners' diverse needs, considering differences in literacy, culture, and educational background (Huang & Wang, 2021). In their role as trainers, they provide participants with practical skills to improve employability and economic independence, while as advocates, they connect marginalized individuals to resources and address broader community concerns (Lee, 2022). Continuous professional development is essential to help educators stay responsive to evolving community needs, apply innovative teaching methods, and manage the social and emotional challenges that arise in diverse learning environments (Nelson et al., 2022; Li & Sun, 2021). Institutional support, including resources, collaboration, and recognition, further enhances educator satisfaction, reduces burnout, and sustains program impact (Wong & Ng, 2021).

Despite their critical role, community educators often face significant challenges that hinder program delivery. Limited funding restricts access to quality teaching materials,

technology, and facilities, forcing educators to operate in resource-constrained environments (Smith et al., 2020). Engaging and retaining participants can also be difficult due to economic pressures, time constraints, or lack of awareness about available programs (Choi, 2020). Additionally, the emotional demands of working with marginalized groups can lead to burnout, underscoring the importance of strong institutional and mental health support systems for educators (Kim & Park, 2019).

Multisystem Approach in Community Education. Bronfenbrenner's Ecological Systems Theory (EST) provides a comprehensive framework for understanding how multiple environmental systems interact to shape human development. Proposed by Urie Bronfenbrenner in 1979, EST posits that individuals exist within interconnected systems—the microsystem, mesosystem, exosystem, macrosystem, and chronosystem—that collectively influence their experiences over time (Bronfenbrenner, 1979). Recent research has increasingly applied EST to community education, using it to analyze how multisystem factors affect program effectiveness and the professional development of educators (Zhao & Li, 2021; Xu & Feng, 2022). This literature review examines the application of EST in community education, emphasizing the multisystem approach and its implications for designing, implementing, and evaluating programs.

At the microsystem level, which focuses on immediate environments such as families, schools, and workplaces, community education research highlights the critical role of direct interactions between educators, learners, and peers. These interactions significantly shape professional growth, teaching practices, and problem-solving skills. Zhao and Li (2021) observed that educators who engaged deeply with learners were more likely to develop adaptive teaching strategies, particularly in resource-constrained settings. Similarly, peer collaboration within the microsystem has been shown to enhance professional development and teaching quality. Xu and Feng (2022) found that knowledge sharing and team support created a collaborative network that not only strengthened instructional practices but also provided emotional support, helping educators navigate daily challenges and sustain motivation.

The mesosystem, which encompasses the relationships between different microsystems, plays a vital role in connecting educational settings with external stakeholders such as NGOs, government agencies, and community organizations. These partnerships contribute to resource sharing and program enrichment, as noted by Zhao and Li (2021), who observed that collaborations with external groups enhanced program offerings by integrating additional expertise and resources. However, such collaborations can also lead to misaligned priorities and communication challenges, requiring educators to mediate among stakeholders. Cultural alignment within the mesosystem is also essential. Xu and Feng (2022) emphasized that programs respecting local traditions and community values gained greater acceptance and participation, especially in rural areas where economic concerns often overshadow formal education. At the macrosystem level, national policies like China's "Lifelong Learning for All" initiative provide an important framework for community education but often face challenges due to insufficient funding and limited adaptability to local contexts (Zhao & Li, 2021). Cultural values further influence program implementation, with rural norms sometimes prioritizing survival and family obligations over schooling, requiring educators to strike a balance between respecting local traditions and promoting lifelong learning (Xu & Feng, 2022).

Global Perspectives on Community Education. Community education plays a crucial role in creating accessible, inclusive, and community-centered learning opportunities worldwide. Research has consistently shown its value in promoting lifelong learning and strengthening social cohesion (Kim & Park, 2021). In countries with established frameworks, such as the United Kingdom and Australia, community education programs effectively engage adult learners and address local skill gaps. For example, UK studies report that such programs

enhance participants' social and professional skills, contributing to both economic empowerment and social integration (Smith & Bradley, 2022). These initiatives often focus on vocational training, health education, and literacy, tailored to meet the specific needs of their communities.

Comparative studies reveal that community education adapts to cultural and socio-economic contexts. In developed countries like Canada, programs prioritize lifelong learning and civic engagement, supported by government funding and strong infrastructure (Jones & Lee, 2019). In contrast, developing countries such as Brazil and the Philippines emphasize basic literacy, vocational skills, and income-generating activities to address urgent socio-economic challenges (Garcia & Santos, 2020). Digital tools have further expanded the reach of community education, with mobile and e-learning platforms improving access for rural communities in Kenya and India, equipping learners with relevant skills for local and global markets (Mwangi & Kamau, 2023; Sharma, 2020). However, these digital solutions require significant infrastructure and training investments, which can be a barrier in resource-limited regions.

Challenges and Barriers in Implementing Community Education Programs. Community education programs worldwide continue to face significant challenges that threaten their effectiveness and sustainability, particularly in regions with limited funding and resources. A major issue is resource scarcity, as many programs depend on government or donor funding that is often inconsistent or insufficient to meet operational needs (Wong & Ng, 2022). This financial instability forces administrators to make difficult choices regarding resource allocation, at times compromising the provision of essential materials, facilities, or professional training for staff (Garcia & Santos, 2020). For example, research in Sub-Saharan Africa has revealed widespread shortages of teaching materials and a lack of qualified educators, limiting both the reach and impact of community education initiatives (Adedeji et al., 2021).

In addition to funding constraints, regulatory barriers create further obstacles for community education programs. These initiatives must operate within the boundaries of national and local policies, which vary widely and may impose bureaucratic or restrictive requirements. In China, for instance, tight regulations on curriculum content and teaching methods restrict the flexibility of programs, particularly in rural areas where more localized approaches are needed (Zhou & Li, 2021). Compliance with such regulations often consumes significant time and administrative resources, diverting attention from program development and delivery. To overcome these limitations, many programs collaborate with local organizations or international NGOs to gain greater flexibility and adapt their services to meet community-specific needs (Adedeji et al., 2021).

Another persistent challenge is ensuring consistent learner engagement and retention, given that community education typically relies on voluntary participation. Economic pressures, household responsibilities, and limited awareness of program benefits often lead to irregular attendance and high dropout rates (Kim & Park, 2021). Educators, who already face resource and institutional constraints, frequently adapt their strategies to meet diverse learner needs, using flexible schedules, modular course formats, and community outreach efforts to boost participation (Jones & Lee, 2019). These adaptations, while effective, require additional support that is not always available, especially in low-income areas (Nelson et al., 2021). Nevertheless, educators have shown considerable resilience by developing innovative approaches, such as integrating local languages, cultural practices, and community-relevant issues into their curriculum. These strategies – seen in contexts ranging from Nepal to South America – have been found to improve engagement and make learning more meaningful, underscoring the importance of sustained support for educators and programs alike (Sharma, 2020; Mwangi & Kamau, 2023; Garcia & Santos, 2020; Wong & Ng, 2022).

Overview of Community Education in China. Community education in China has grown substantially in recent decades, becoming a key strategy for fostering social development and meeting the educational needs of diverse groups, including marginalized populations, rural communities, and the urban workforce. These initiatives promote lifelong learning and social cohesion by offering accessible opportunities such as vocational training, health education, and cultural activities, aligning with the country's evolving social and economic demands (Chen & Liu, 2022; Li & Sun, 2021). The government has played a central role through policies like the "Lifelong Learning for All" initiative, which prioritizes adult education and workforce development to support economic growth (Wu & Yang, 2019; Tang et al., 2020). Collaboration between government agencies, local organizations, and NGOs further strengthens program effectiveness by combining resources and tailoring services to meet community-specific needs.

Community Educators in China. Community educators in China take on multifaceted roles that go beyond traditional teaching, often serving as facilitators, counselors, and community advocates to address the diverse needs of their learners (Xu & Feng, 2022). This is particularly crucial in rural and underserved areas where resources are limited, and educators bridge the gap between formal education systems and local communities by providing tailored learning opportunities (Chen & Liu, 2022). Their work not only responds to local demands but also helps reduce social inequalities by making education accessible to populations that might otherwise be excluded. The socio-cultural context plays a major role, as educators must respect traditional customs while introducing modern skills, requiring cultural sensitivity and trust-building with learners who may initially resist formal education (Wu & Yang, 2019).

Professional development is essential to support these educators, yet access remains uneven, especially in rural areas. While urban educators may benefit from training and institutional resources, their rural counterparts often face limited opportunities, leading to disparities in program quality across regions. Strengthening professional development and structural support is therefore critical to improving educator effectiveness, enhancing morale, and ensuring the long-term impact of community education programs in China.

Policy and Structural Influences on Community Education in China. Chinese educational policies and structural frameworks have significantly shaped the development of community education, prioritizing adult literacy, vocational training, and social integration. Initiatives such as "Lifelong Learning for All" and "Education for the Rural Population" aim to bridge rural-urban divides and promote equal opportunities for personal growth (Chen et al., 2021). These policies integrate community education into local government agendas, positioning it as a key driver of social and economic development. However, implementation is often hindered by funding limitations, bureaucratic delays, and inconsistent enforcement across regions, creating disparities between urban areas with robust resources and rural communities that lack adequate financial and human capital (Xu & Feng, 2022).

The centralized governance model in China can also create a gap between national policy goals and local realities, as program administrators may face challenges adapting policies to meet community-specific needs. Scholars have suggested that decentralizing authority and granting local governments greater flexibility could enhance the relevance and effectiveness of community education initiatives (Chen & Liu, 2022). Addressing structural barriers and fostering adaptable policy frameworks are critical to expanding the reach and impact of community education, particularly in regions where such programs can most effectively promote social inclusion and development.

METHODS

Population and Sampling. In this study, community educators were defined as individuals who actively delivered educational

services within community education programs in Shanxi Province. Their role extended beyond traditional teaching, as they facilitated learning, promoted skill development, and fostered social participation among diverse groups such as adults seeking vocational training, elderly learners, and marginalized populations. These educators were also involved in program planning, partnership building, and community outreach to ensure that educational opportunities were accessible and aligned with local needs (Zhao & Li, 2021).

Participants were chosen using a combination of purposive and convenience sampling, ensuring that those selected met specific criteria relevant to the study while also being available and willing to participate. A total of 20 educators were included, a sample size sufficient to achieve data saturation and allow for an in-depth exploration of individual experiences (Merriam & Tisdell, 2019). Inclusion criteria required participants to have at least one year of continuous experience in community-based teaching or educational program facilitation and to be directly involved in curriculum design, organizational coordination, or community outreach. The final sample (see Table 1) reflected a diverse set of professional backgrounds, enabling a comprehensive understanding of the factors shaping community education in Shanxi Province.

Instrumentation. The main research instrument for this study was a semi-structured interview tool designed to align with the research questions and capture the lived experiences of community educators in Shanxi Province. Semi-structured interviews were selected because they provided a balance between structured guidance and the flexibility to explore participants' responses in depth. This approach allowed the researcher to collect rich, detailed data on educators' professional experiences while adapting questions based on the unique perspectives of each participant. As Creswell and Poth (2018) note, this method is well-suited for qualitative research as it encourages open dialogue while ensuring that all key topics related to the study's objectives are addressed.

The interview tool was organized into several sections: informed consent, demographic information, and four main sections corresponding to Bronfenbrenner's Ecological Systems Theory. The consent section established ethical transparency by outlining the study's purpose, data collection process, confidentiality measures, and participants' right to withdraw at any time. Participants were asked to sign a written consent form prior to beginning the interview. The demographic section gathered essential participant details such as age, gender, educational background, years of experience, and areas of expertise (e.g., vocational training, health education, or special needs education), providing context for interpreting their responses.

The main body of the interview tool was structured around the ecological systems framework. The microsystem section explored educators' direct teaching experiences, interactions with learners, and how these shaped their personal and professional development. The mesosystem section examined collaborations with local organizations, schools, and government agencies, highlighting how partnerships supported or challenged program delivery. The macrosystem section focused on the broader social, cultural, and policy influences affecting educators' roles and working conditions. Finally, the interview concluded with a section dedicated to gathering participants' recommendations for enhancing community education programs, allowing them to share practical suggestions for improving program quality and educator support.

Data Gathering Procedure. The data gathering procedure for this study was carefully structured to gain a comprehensive understanding of community educators' experiences in Shanxi Province. A mixed-methods approach was employed, combining semi-structured interviews and document analysis as the primary data collection techniques. This combination enabled triangulation, strengthening the reliability and validity of the findings. Prior to full implementation, the interview tool underwent

pre-testing with a small group of community educators who were not part of the final sample. This step ensured clarity, relevance, and alignment with the research questions, allowing the researcher to refine any vague or overly complex items and ensure that the tool effectively captured the participants lived experiences.

Participant recruitment utilized a combination of purposive and convenience sampling. Purposive sampling ensured that participants met the required criteria, including at least one year of experience in community-based teaching or program facilitation and active involvement in planning or delivering educational services. Convenience sampling streamlined the process by selecting participants based on availability and willingness to participate. Recruitment was conducted through local community education centers and partner organizations, with formal permissions and permits secured from education authorities and organizational leaders. These steps were crucial for gaining access to potential participants, building trust, and ensuring compliance with local regulations and ethical standards.

Ethical considerations were central to the data collection process. Participants received an information sheet explaining the study's objectives, data collection process, confidentiality measures, and their right to withdraw at any time. Written informed consent was obtained before participation, ensuring transparency and safeguarding participants' rights. Interviews were scheduled according to participants' preferences and conducted either in person or online. Each session, lasting approximately 45 to 60 minutes, was audio-recorded with consent for accurate transcription. The interview tool followed Bronfenbrenner's Ecological Systems Theory, covering demographic information, microsystem, mesosystem, and macrosystem questions, as well as recommendations for program improvement. This structure allowed participants to share their experiences comprehensively while maintaining focus on the research objectives.

Document analysis complemented the interviews, offering additional insights and contextual information. Relevant program reports, policy documents, and organizational records were collected with formal authorization from local education authorities and organizations. These documents were systematically reviewed and coded to identify recurring themes, patterns, and structural or policy factors affecting community education. Document analysis was particularly useful in corroborating interview findings, such as confirming challenges related to funding or program delivery mentioned by participants. All data, including recordings, transcripts, and documents, were stored securely on password-protected devices, with participant identities anonymized using unique identifiers to ensure confidentiality throughout the study.

Data Analysis. The data analysis process combined Colaizzi's Seven-Step Process for qualitative interview data with thematic analysis for document review to capture both the personal experiences of community educators and the broader contextual factors influencing community education programs in Shanxi Province. Colaizzi's method provided a structured yet flexible framework, guiding the researcher through familiarization with the transcripts, extraction of significant statements, formulation of meanings, grouping into themes, and creating an exhaustive description of participants' experiences. The process concluded with distilling the findings into their core essence and conducting member-checking to validate accuracy, ensuring the results faithfully reflected participants lived experiences.

Document analysis complemented the interviews by offering contextual insights and supporting triangulation. Policy documents, program reports, and organizational guidelines were systematically reviewed, coded, and organized into themes that aligned with those emerging from the interview data. This process helped confirm participant accounts and provided additional understanding of structural and policy-level influences, such as funding mechanisms, curriculum frameworks, and

government initiatives shaping community education in Shanxi Province. Cross-referencing both data sources allowed for a more robust and coherent interpretation of findings.

To ensure rigor and trustworthiness, strategies such as triangulation, member-checking, reflexivity, and detailed documentation were applied throughout the analysis. Triangulation strengthened validity by comparing interviews and documents, while member-checking allowed participants to verify interpretations. Reflexivity helped the researcher remain aware of potential biases, and comprehensive documentation ensured transparency and reproducibility of the process. Together, these steps created a credible and reliable foundation for the development of the Integrated Community Empowerment and Education Model (ICEEM).

RESULTS

Perceived impact of community education programs on the professional development of community educators. Table 1 indicated that community educators in Shanxi Province viewed community education programs as essential to their professional growth. The central theme, Fostering Resilience and Growth through Community-Centric Engagement, captured how educators enhanced their skills, engaged in peer collaboration, and found professional satisfaction through their involvement.

Table 1
Thematic Analysis of Participant Responses on Community-Based Teaching Practices

Theme	Category	Code	Actual Responses
Fostering Resilience and Growth through Community-Centric Engagement	Skill Development	Curriculum adaptation	"I learned to customize lesson plans to address the unique needs of rural learners." (P5)
		Problem-solving in resource-limited settings	"We have to innovate constantly, like creating materials from available local resources." (P8)
	Peer Collaboration	Knowledge sharing	"My colleagues often share strategies during workshops, and I've incorporated these into my classes." (P11)
		Team support	"Discussing challenges with peers gives me fresh ideas and keeps me motivated." (P15)
	Professional Fulfillment	Community recognition	"When the community recognizes our efforts, it boosts my confidence and inspires me to improve." (P3)
		Enhanced teaching practices	"Participating in these programs has refined my teaching methods and made me more adaptable." (P9)

Three categories – Skill Development, Peer Collaboration, and Professional Fulfillment – offered deeper insight into these experiences. Educators shared that adapting curricula and innovating within resource-limited settings significantly contributed to their growth. For instance, one participant (P5) emphasized learning to customize lesson plans for rural learners, while another (P8) highlighted the need for continuous innovation using locally available resources. These examples reflected educators' development of adaptability, creativity, and problem-solving skills.

Peer Collaboration emerged as another vital contributor to professional development, as educators described the value of knowledge sharing and teamwork. Collaborative environments allowed them to exchange strategies and gain support from colleagues. For example, one participant (P11) noted incorporating peers' strategies into their teaching after workshops, while another (P15) shared that discussing challenges with peers provided new ideas and motivation. This collaborative network not only improved teaching quality but also offered emotional reinforcement, enabling educators to navigate challenges more effectively.

Professional Fulfillment was closely tied to community engagement and continuous improvement in teaching practices. Participants expressed that community recognition boosted their confidence and inspired them to refine their methods. One educator (P3) reported feeling validated when the community acknowledged their efforts, while another (P9) emphasized that program participation enhanced adaptability and teaching effectiveness. These findings aligned with Bronfenbrenner's Ecological Systems Theory, showing that the microsystem, which is the direct interactions with learners, peers, and the community, was central to shaping professional development. Together, the categories highlighted how collaboration, skill-building, and recognition fostered resilience and sustained growth among community educators, emphasizing the need for supportive and innovative educational environments.

Influence of interactions and relationships within the community and between local organizations to the experiences of community educators in delivering education programs. Table 2 illustrated how community relationships and organizational interactions shaped the experiences of educators delivering education programs in Shanxi Province. The central theme, Navigating Complex Systems to Enhance Community Impact, reflected the multifaceted nature of their work, emphasizing the need to collaborate with external organizations, build partnerships, and address both cultural and operational challenges.

Table 2

Thematic Analysis of Participant Responses on Community Collaboration and Organizational Interactions in Delivering Education Programs

Theme	Category	Code	Actual Responses
Navigating Complex Systems to Enhance Community Impact	Support from External Organizations	NGO and government backing	"The local government provides funding, but it's often delayed, making it difficult to plan programs." (P2)
		NGO collaboration	"NGOs bring in valuable resources and expertise that complement what we can offer." (P8)
	Collaboration and Partnerships	Synergistic partnerships	"Our partnership with the health organization allowed us to address both education and health awareness." (P13)
		Inter-institutional coordination	"Sometimes, miscommunication with partner organizations slows down the progress of our programs." (P5)
	Navigating Challenges	Managing conflicting priorities	"Stakeholders sometimes have different priorities, which we need to balance carefully." (P10)
		Cultural alignment	"We need to adjust programs to respect local traditions, or we risk losing community support." (P17)

Three categories—Support from External Organizations, Collaboration and Partnerships, and Navigating Challenges—provided insight into these dynamics. Educators acknowledged the critical role of NGOs and government agencies in supplying funding and expertise, though they also reported challenges such as funding delays and differing priorities. For example, one participant (P2) highlighted that delayed financial support hindered program planning, while another (P8) appreciated the value of NGO contributions in complementing existing resources. These findings showed that external support was both a key enabler and a source of complexity in program delivery.

Collaboration and Partnerships emerged as another major factor influencing program outcomes. Educators reported that partnerships enriched their work by combining resources, expertise, and reach, such as integrating health awareness into education initiatives through collaborations with health organizations. However, they also described difficulties in maintaining smooth coordination, as miscommunication or conflicting goals sometimes slowed program progress. This revealed that while partnerships were crucial for program enhancement, they required strong communication and careful management to maximize their benefits and avoid disruptions.

The final category, Navigating Challenges, captured the difficulties educators faced in balancing competing stakeholder priorities and aligning programs with local cultural expectations. Participants stressed the importance of respecting traditions to ensure community acceptance and long-term program success. These findings aligned with Bronfenbrenner's mesosystem, which emphasizes the interplay between interconnected systems such as schools, NGOs, and local government. Together, the categories highlighted the complexity of implementing community education programs in a multi-stakeholder environment. The results underscored the need for effective coordination, cultural sensitivity, and resource management to strengthen community education's impact and equip educators to better meet the diverse needs of the communities they serve.

Influence of social, cultural, and policy factors on the roles and challenges of community educators. Table 3 showed that social, cultural, and policy factors significantly shaped the roles and challenges of community educators in Shanxi Province. The central theme, Navigating the Intersection of Tradition, Policy, and Community Needs, captured how educators balanced traditional beliefs, community expectations, and the demands of national education policies. Social and cultural norms in rural areas often placed economic survival and family duties above formal education, creating difficulties in learner engagement. Educators reported the need to design programs that respected local traditions while encouraging

participation. For instance, some participants noted that families viewed education as secondary to earning a living, which required them to act as cultural intermediaries, bridging the gap between traditional practices and modern educational goals.

Table 3
Thematic Analysis of Participant Responses on the Influence of Social, Cultural, and Policy Factors in Community Education

Theme	Category	Code	Actual Responses
Navigating the Intersection of Tradition, Policy, and Community Needs	Social and Cultural Factors	Balancing traditional values	"Some families prioritize traditional practices over education, so I have to design programs that respect their beliefs while promoting learning." (P6)
		Community perceptions of education	"In rural areas, education is often seen as secondary to earning a living, so engaging learners is challenging." (P14)
	Policy Influence	Supportive national initiatives	"Policies like 'Lifelong Learning for All' have given us a framework to expand our programs and reach more people." (P8)
		Policy limitations	"While national policies are ambitious, the lack of local funding often makes them difficult to implement effectively." (P10)
	Addressing Challenges	Need for localized support	"Policies need to be more flexible to account for the unique needs of rural communities in Shanxi." (P17)
		Advocacy for better resources	"If the government provided more funding and resources, we could better serve marginalized groups." (P3)

Policy factors also played a major role by providing structure and opportunities for expanding community education programs. National initiatives, such as "Lifelong Learning for All," were praised for promoting inclusivity and broadening program reach. However, educators pointed out that policies often lacked local adaptability and sufficient funding, which made implementation challenging in rural settings. This mismatch between national goals and local realities required educators to make adjustments to ensure programs could be effectively delivered despite limited resources.

To address these challenges, educators emphasized the need for flexible, context-sensitive policies and increased resource allocation. They advocated for policies tailored to the unique socio-economic and cultural conditions of rural communities and called for greater financial and logistical support to improve program accessibility. These findings align with Bronfenbrenner's macrosystem, which highlights the influence of broader societal and policy contexts on individual experiences. The results underscored the importance of aligning national policies with local needs, respecting cultural values, and providing adequate resources to ensure community education programs are sustainable and impactful.

The Integrated Community Empowerment and Education Model (ICEEM) for Community Education Program. As illustrated in Figure 1, the study's findings led to the creation of the Integrated Community Empowerment and Education Model (ICEEM), a comprehensive framework designed to address the challenges and opportunities faced by community education programs in Shanxi Province.

Figure 1
Integrated Community Empowerment and Education Model (ICEEM)

The model consists of five interconnected components: Community-Centered Curriculum Design, Capacity Building for Educators, Strengthened Partnerships, Localized Resource Management, and Community Engagement and Feedback. Each element was intentionally structured to align with Bronfenbrenner's Ecological Systems Theory, ensuring that the model addressed the individual, organizational, and systemic influences shaping community education.

The Community-Centered Curriculum Design component focuses on developing programs that are culturally relevant, economically realistic, and responsive to local needs. By tailoring curricula to reflect rural learners' realities and incorporating locally available

resources, educators could create lessons that resonated with participants and encouraged greater engagement. The Capacity Building for Educators component emphasizes continuous professional development, equipping teachers with skills in curriculum adaptation, leadership, and technology integration. This approach ensures that educators are prepared to meet diverse learner needs and deliver quality education even in resource-limited contexts.

The Strengthened Partnerships component underscores the value of collaboration with NGOs, government agencies, and local organizations. These partnerships provide resources and expertise that enrich programs, such as integrating health education into vocational training initiatives. At the same time, the model recognizes the potential challenges of conflicting priorities or miscommunication, highlighting the importance of clear coordination and shared objectives among stakeholders. The Localized Resource Management component addresses funding delays and inequitable resource distribution by advocating for flexible funding mechanisms and targeted support to underserved communities, ensuring fair access to educational opportunities.

Finally, the Community Engagement and Feedback component highlights the need for active community involvement in program design, implementation, and evaluation. By incorporating local perspectives and regularly gathering feedback, programs remain adaptable, culturally sensitive, and aligned with evolving community needs. Together, these five components form a holistic and practical model that reflects Bronfenbrenner's ecological systems by addressing direct educator-learner interactions (microsystem), strengthening inter-organizational collaboration (mesosystem), and incorporating broader social and policy influences (macrosystem). The model's emphasis on adaptability over time also reflects the chronosystem, ensuring long-term relevance. Overall, ICEEM offers a robust framework to enhance the effectiveness, sustainability, and community impact of education programs in Shanxi Province.

DISCUSSION

The study examined the impact of community education programs on educators in Shanxi Province, China, using Bronfenbrenner's Ecological Systems Theory as a framework. It generated valuable insights into the roles, challenges, and opportunities faced by community educators, ultimately leading to the creation of the Integrated Community Empowerment and Education Model (ICEEM). Findings showed that community education programs were instrumental in fostering professional growth, with educators reporting improvements in curriculum adaptation, problem-solving, and resilience despite limited resources. Peer collaboration emerged as a key source of emotional and professional support, while community recognition enhanced their motivation and sense of fulfillment. These results underscored the central role of the microsystem – direct interactions with learners, peers, and the community – in shaping professional development and strengthening teaching practices.

Interactions within the community and with local organizations were also critical in shaping educators' experiences. Partnerships with NGOs, government agencies, and other stakeholders provided essential resources and training but also brought challenges such as misaligned priorities and communication barriers. Educators stressed the need for cultural alignment to gain community acceptance, which required balancing respect for local traditions with program objectives. These findings highlighted the mesosystem's importance in facilitating collaboration and resource sharing while emphasizing the need for effective coordination and culturally responsive strategies to ensure smooth implementation and stronger program outcomes.

The study also revealed that broader social, cultural, and policy factors heavily influenced educators' roles and the sustainability of education programs. Rural traditions often prioritized economic survival over education, creating a need for culturally sensitive

initiatives to encourage participation. National policies such as "Lifelong Learning for All" provided a foundation for inclusivity but were limited by funding gaps and a lack of localization. Educators advocated for more flexible policies and greater investment in rural education to address disparities and support the long-term success of these programs. These findings demonstrated the macrosystem's critical role in shaping the environment in which educators operate, requiring them to navigate cultural sensitivities while advocating for resources and reforms.

To address these challenges, the study proposed the Integrated Community Empowerment and Education Model (ICEEM), a comprehensive framework that targets the microsystem, mesosystem, and macrosystem simultaneously. ICEEM consists of five key components: community-centered curriculum design, educator capacity building, strengthened partnerships, localized resource management, and community engagement and feedback. Together, these elements provide a practical, multi-level strategy to improve program quality, promote educator development, and sustain community involvement. By aligning educational initiatives with local needs and systemic support, the ICEEM offers a scalable and contextually relevant approach to strengthening community education in Shanxi Province and similar rural contexts.

This study highlights the complex and multi-layered nature of community education programs in Shanxi Province and their significant impact on community educators. Using Bronfenbrenner's Ecological Systems Theory, the findings show that program success is shaped by interactions across the microsystem, mesosystem, and macrosystem. At the microsystem level, direct relationships with learners, peers, and the community were found to be crucial for educators' professional growth, skill development, and motivation. The mesosystem revealed the value of partnerships with NGOs and government agencies, which provided resources and expanded educational reach but also introduced challenges like misaligned priorities and communication barriers. Meanwhile, the macrosystem underscored the influence of cultural norms and national policies, pointing to the need for culturally sensitive approaches and better localized implementation supported by sufficient funding.

The study calls for a comprehensive, multi-system strategy to strengthen community education in Shanxi Province. The Integrated Community Empowerment and Education Model (ICEEM) offers a practical framework to address these challenges through community-centered curriculum design, capacity building for educators, stronger partnerships, localized resource management, and active community participation. Implementing ICEEM can align educational programs with local realities, improve program quality, and create sustainable, impactful outcomes that foster lifelong learning and empower both educators and communities.

The study offers key implications for policy, practice, and research in community education, particularly in Shanxi Province and similar rural contexts. From a policy standpoint, it highlights the need for flexible, localized educational frameworks that respond to the unique socio-economic and cultural realities of rural areas. National programs like Lifelong Learning for All must be supported with adequate funding and tailored implementation strategies to close the gap between policy goals and practical outcomes. Prioritizing investment in rural education infrastructure, teaching resources, and digital tools is crucial for empowering educators and expanding access to quality programs.

In practice, the findings underscore the importance of capacity-building initiatives and continuous professional development to equip educators with skills in curriculum adaptation, resource management, and innovative teaching methods. Strengthening partnerships among educators, NGOs, local organizations, and government agencies is essential to improve coordination, share resources, and maximize program impact. For future research,

longitudinal studies examining the long-term effects of community education on both educators and learners are recommended, as well as investigations into how policy and local practices can be harmonized for greater sustainability. Overall, these implications call for a holistic, multi-system approach that integrates policy, practice, and research to create more responsive, equitable, and impactful community education programs.

The study acknowledges several limitations that shape the interpretation of its findings. Its focus on Shanxi Province limits generalizability to regions with different socio-cultural, economic, or policy contexts, suggesting the need for future research across more diverse settings. The use of qualitative methods, while providing rich insights, carried the risk of subjectivity despite measures like triangulation and thematic analysis to enhance credibility. The purposive and convenience sampling approach restricted participant diversity, potentially excluding voices of educators who were less available, which may have affected the comprehensiveness of the results. Additionally, the study primarily centered on educators' perspectives, giving less attention to learners, policymakers, and NGOs, which may have limited the understanding of broader systemic dynamics. Future studies should include a wider range of stakeholders to provide a more holistic view of community education.

The study offers a comprehensive set of recommendations to enhance the effectiveness and sustainability of community education programs in Shanxi Province, guided by the Integrated Community Empowerment and Education Model (ICEEM). It calls on policymakers to adopt flexible, localized frameworks, increase funding, and grant greater autonomy to local governments to tailor programs to rural needs, ensuring equitable access for marginalized groups. For educators, it emphasizes the importance of professional development, peer collaboration, and community involvement to create relevant, adaptive curricula and foster continuous growth. Local organizations and NGOs are encouraged to formalize partnerships with government agencies, optimize resource sharing, and support program delivery through equitable distribution of materials and infrastructure. Community members are urged to actively participate in program design, implementation, and feedback processes, fostering shared ownership and cultural alignment. Together, these recommendations promote a collaborative, multi-system approach that addresses resource disparities, strengthens partnerships, and builds community engagement, ensuring that education programs remain relevant, inclusive, and impactful in driving lifelong learning and community development across Shanxi Province.

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